

Facility Name: **SK Battery America, Inc.**  
City: Commerce  
County: Jackson  
AIRS #: 04-13-157-00065

Application #: TV-612385  
Date Application Received: November 29, 2021  
Permit No: 3691-157-0065-V-02-0

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## Introduction

This narrative is being provided to assist the reader in understanding the content of referenced operating permit. Complex issues and unusual items are explained here in simpler terms and/or greater detail than is sometimes possible in the actual permit. The permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

**I. Facility Description****A. Facility Identification**

1. Facility Name - SK Battery America, Inc.
2. Parent/Holding Company Name - SK Battery America, Inc.
3. Previous and/or Other Name(s) - There are no other names under which this facility has operated.
4. Facility Location - 1760 Steve Reynolds Industrial Parkway, Commerce, Georgia 30529
5. Attainment, Non-attainment Area Location, or Contributing Area - The facility is located in an attainment area.

**B. Site Determination**

There are no other facilities which could possibly be contiguous or adjacent and under common control.

**C. Existing Permits**

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a comparative review of form A.6, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/Effectiveness	Purpose of Issuance
3691-157-0065-E-01-0	10/30/2019	Construction and operation of a facility for the manufacture of lithium ion batteries
3691-157-0065-E-01-1	11/9/2020	Construction and operation of Phase 2 which will include electrode manufacturing, assembly and formation of lithium ion cells (approximately 9.8 gigawatt-hrs/hr) for electric vehicle batteries
No Permit Required	2/3/2021	Construction of a Failure and Destructive Testing of Completed Cells and Modules laboratory

## D. Process Description

### 1. SIC Codes(s)

#### 3691 – Storage Batteries

The SIC Code(s) identified above were assigned by EPD's Air Protection Branch for purposes pursuant to the Georgia Air Quality Act and related administrative purposes only and are not intended to be used for any other purpose. Assignment of SIC Codes by EPD's Air Protection Branch for these purposes does not prohibit the facility from using these or different SIC Codes for other regulatory and non-regulatory purposes. Should the reference(s) to SIC Code(s) in any narratives or narrative addendum previously issued for the Title V permit for this facility conflict with the revised language herein, the language herein shall control; provided, however, language in previously issued narratives that does not expressly reference SIC Code(s) shall not be affected.

### 2. Description of Product(s)

The facility manufactures lithium ion cells for electric vehicle batteries.

### 3. Overall Facility Process Description

There are three steps of lithium ion battery manufacturing - electrode manufacturing, assembly, and formation. In the electrode manufacturing, solid raw materials for the anodes and cathodes are measured and mixed - solvent N-Methyl-2-Pyrrolidone (NMP) for cathodes and water for anodes - and other components. They are then sent to dryers and cleaned. Emissions from various areas are controlled using baghouses, activated carbon towers, and scrubbers for NMP recovery. In the assembly process, cathodes are dried further and all electrodes are notched. After notching, the electrodes are stacked, and the tabs are welded together and filled with electrolyte. Emissions from assembly are controlled by baghouses and activated carbon towers. In the formation area, the electrolyte cells are activated, allowed to age, then charged and discharged. The emissions are controlled by activated carbon towers and a scrubber. The facility will also have several laboratories, an emergency fire pump, boilers for steam demand, and hot oil heaters.

### 4. Overall Process Flow Diagram

The facility provided a process flow diagram in their Title V permit application.

## E. Regulatory Status

### 1. PSD/NSR

This Title V Permit includes a limit of 50 ppm CO in the boilers which will limit facility-wide CO emissions to less than 100 tpy as a CO PSD Avoidance limit.

This Title V Permit includes a facility-wide limitation of 240 tons per year of VOC emissions to avoid a PSD review.

## 2. Title V Major Source Status by Pollutant

**Table 2: Title V Major Source Status**

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	Yes			✓
PM <sub>10</sub>	Yes			✓
PM <sub>2.5</sub>	Yes			✓
SO <sub>2</sub>	Yes			✓
VOC	Yes	✓		
NO <sub>x</sub>	Yes			✓
CO	Yes		✓	
TRS	No			
H <sub>2</sub> S	No			
Individual HAP	Yes		✓	
Total HAPs	Yes		✓	

## 3. MACT Standards

40 CFR 63 Subpart CCCCCC – “National Emissions Standards for Hazardous Air Pollutants for Area Sources: Paint and Allied Products”

40 CFR 63 Subpart ZZZZ – “National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines”

## 4. Program Applicability (AIRS Program Codes)

Program Code	Applicable (y/n)
Program Code 6 - PSD	No
Program Code 8 – Part 61 NESHAP	No
Program Code 9 - NSPS	Yes
Program Code M – Part 63 NESHAP	Yes
Program Code V – Title V	Yes

## Regulatory Analysis

### II. Facility Wide Requirements

#### A. Emission and Operating Caps

The facility has accepted a 240 ton per year VOC limit to avoid PSD review. This limit covers the entire facility and all future expansions. The facility utilizes several scrubbers and activated carbon towers to control VOC emissions. Scrubbers are tested yearly, and the VOC concentrations from the activated carbon towers are manually read weekly. The facility also tracks and records of VOC-containing material usage.

The facility has accepted a 10/25 ton per year HAP limit to avoid applicability to Part 63 Major Source NESHAPs. This limit covers the entire facility and all future expansions. The facility utilizes several scrubbers and activated carbon towers to control HAP emissions and keeps records of HAP-containing material usage.

#### B. Applicable Rules and Regulations

There are no applicable site-wide rules or regulations for this facility.

#### C. Compliance Status

The facility did not indicate that they are out of compliance with any facility-wide requirement.

#### D. Permit Conditions

Permit Condition 2.1.1 limits the facility to 240 tons of VOC emission during any consecutive 12-month period. This limit was established in Condition 2.1 of Permit No. 3691-157-0065-E-01-0 in order to avoid a PSD review under 40 CFR 52.21. The facility must keep records of VOC usage and calculate monthly and 12 month rolling total emission in order to prove compliance with this limit. There were no changes to this condition in this Title V Permit.

Permit Condition 2.1.2 limits the facility to 10 tons of any individual HAP emission and 25 tons of total HAP emissions during any consecutive 12-month period. This limit was established in Condition 2.2 of Permit No. 3691-157-0065-E-01-0 in order to remain an area source for the purposes of 40 CFR Part 63. The facility must keep records of HAP usage and calculate monthly and 12 month rolling total emissions in order to prove compliance with this limit. There were no changes to this condition in this Title V Permit.

### III. Regulated Equipment Requirements

#### A. Equipment List for the Process

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
PR01	Powder Room: Anode Measure	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	BH03	Fabric filter/baghouse
PR02	Powder Room: Cathode Measure	40 CFR 63 Subpart A 40 CFR 63 Subpart CCCCCC 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	BH01	Fabric filter/baghouse
PR03	Powder Room: Anode Feed	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	BH04	Fabric filter/baghouse
PR04	Powder Room: Cathode Feed	40 CFR 63 Subpart A 40 CFR 63 Subpart CCCCCC 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	BH02	Fabric filter/baghouse
2PR01	P2 Powder Room: Anode Measure	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2BH01	Fabric filter/baghouse
2PR02	P2 Powder Room: Cathode Measure	40 CFR 63 Subpart A 40 CFR 63 Subpart CCCCCC 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2BH02	Fabric filter/baghouse
2PR03	P2 Powder Room: Anode Feed	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2BH03	Fabric filter/baghouse
2PR04	P2 Powder Room: Cathode Feed	40 CFR 63 Subpart A 40 CFR 63 Subpart CCCCCC 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2BH04	Fabric filter/baghouse
2PR05	P2 Cathode Powder Vacuum Pump	40 CFR 63 Subpart A 40 CFR 63 Subpart CCCCCC	None	None
2PR06	P2 Cathode Powder	40 CFR 63 Subpart A 40 CFR 63 Subpart CCCCCC 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2BH05 and 2BH06	Fabric filter/baghouse(s)
2PR07 & 2PR08	P2 Anode Mixer & Powder Vacuum Pumps	None	None	None
2PR09	P2 Anode Powder	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2BH07 & 2BH08	Fabric filter/baghouse(s)
AS01 thru AS04	Anode Separation	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	BH05-BH08	Fabric filters/baghouses
CP01 thru CP04	Cathode Processing	None	AC01	Activated Carbon Tower
2CP01 & 2CP02	P2 Cathode Processing	None	AC2101	Activated Carbon Tower
AP01 thru AP04	Anode Processing	None	AC01	Activated Carbon Tower
2AP01 & 2AP02	P2 Anode Processing	None	AC2101	Activated Carbon Tower
CR01	Cathode and Anode Cleaning	None	AC02	Activated Carbon Tower
2CR01	P2 Cathode and Anode Cleaning	None	AC2102	Activated Carbon Tower
DR01 & RS01	Cathode Dryer / NMP Recovery System 1	None	SC01	Scrubber
DR02 & RS02	Cathode Dryer / NMP Recovery System 2	None	SC02	Scrubber
DR03 & RS03	Cathode Dryer / NMP Recovery System 3	None	SC03	Scrubber
DR04 & RS04	Cathode Dryer / NMP Recovery System 4	None	SC04	Scrubber
2DR01 & 2RS01	P2 Cathode Dryer / NMP Recovery System 1	None	2SC0101-1 & 2SC0102-1	Scrubber(s)
2DR02 & 2RS02	P2 Cathode Dryer / NMP Recovery System 2	None	2SC0101-2 & 2SC0102-2	Scrubber(s)

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
CN01 thru CN06	Cathode Notching	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	BH09 through BH26	Fabric filter/baghouse(s)
2CN14, 2CN16, 2CN18, 2CN20, 2CN22, 2CN24	P2 Cathode Notching	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2BH10 through 2BH3	Fabric filter/baghouse(s)
AN01 thru AN06	Anode Notching	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	BH27 through BH44	Fabric filter/baghouse(s)
2AN02, 2AN04, 2AN06, 2AN08, 2AN10, 2AN12	P2 Anode Notching	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2BH32 through 2BH53	Fabric filter/baghouse(s)
CO01 thru CO06	Cathode Ovens	None	AC03	Activated Carbon Tower
2CO01 thru 2CO06	P2 Cathode Ovens	None	AC2201	Activated Carbon Tower
EL01 thru EL06	Electrolyte Filling, Sealing	None	AC03	Activated Carbon Tower
2EL01 thru 2EL06	P2 Electrolyte Filling, Sealing	None	AC2201	Activated Carbon Tower
2ELVP	P2 Assembly Vacuum Pumps	None	AC2201	Activated Carbon Tower
DG01 thru DG06	Cell Degassing	None	AC04, AC05, & AC06	Activated Carbon Tower
2DG01 thru 2DG06	P2 Cell Degassing	None	AC2301, AC2302, & AC2303	Activated Carbon Tower
CD01 & CD02	Cell Discharge	None	AC07 SC05	Activated Carbon Tower Scrubber
2CD01	P2 Cell Discharge	None	AC6701 SC6701	Activated Carbon Tower(s)
QE01	Lab Quality Evaluation	None	AC08	Activated Carbon Tower
QE02	Lab Quality Evaluation	None	AC09	Activated Carbon Tower
LB01	Lab Cell Discharge	None	SC06	Scrubber
LB02	Lab Cell Discharge	None	SC07	Scrubber
2LB01	P2 ICP Lab	None	SC2101	Scrubber
2LB02	P2 Raw Materials Lab	None	SC2102	Scrubber
CT01 & CT02	Colling Tower Set 1 & 2	None	None	None
2CT03	Cooling Tower Set	None	None	None
TK01 thru TK06	NMP Recovery 1, 13,800 gal 80% NMP Tanks 1-6	None	None	None
TK07 thru TK10	NMP Supply 2, 13,200 gal 98% NMP Tanks 7-10	None	None	None
BL01, BL02, & BL03	61.897 MMBtu/hr natural gas boilers 1, 2, & 3	40 CFR 60 Subpart A 40 CFR 60 Subpart Dc 391-3-1-.02(2)(d) 391-3-1-.02(2)(III)	None	None
BL04 & BL05	Boilers 4 & 5 (44.905 MMBtu/hr natural gas boiler)	40 CFR 60 Subpart A 40 CFR 60 Subpart Dc 391-3-1-.02(2)(d) 391-3-1-.02(2)(III)	None	None
OH1, OH2, & OH3	32.757 MMBtu/hr natural gas oil heaters 1-3	40 CFR 60 Subpart A 40 CFR 60 Subpart Dc 391-3-1-.02(2)(d) 391-3-1-.02(2)(III)	None	None
OH4 & OH5	27.778 MMBtu/hr Oil Heaters 4 & 5	40 CFR 60 Subpart A 40 CFR 60 Subpart Dc 391-3-1-.02(2)(d) 391-3-1-.02(2)(III)	None	None
FP01	107 hp diesel fired fire pump engine	40 CFR 60 Subpart A 40 CFR 60 Subpart IIII 40 CFR 63 Subpart A 40 CFR 63 Subpart ZZZZ	None	None

## B. Equipment & Rule Applicability

### **Boilers BL01, BL02, BL03, BL04, and BL05; and Hot Oil Heaters OH1, OH2, OH3, OH4, and OH5**

These heaters and boilers were installed after 2019 and fire natural gas only.

- Boilers BL01, BL02, and BL03 are each rated at 61.897 MMBtu/hr
- Boilers BL04 and BL05 are each rated at 44.905 MMBtu/hr
- Hot Oil heaters OH1, OH2, and OH3 are each rated at 32.757 MMBtu/hr
- Hot Oil heaters OL4 and OH5 are each rated at 27.778 MMBtu/hr

#### Prevention of Significant Deterioration (40 CFR 52.21)

The facility's SIC code of 3691 – Storage Battery Manufacturing – is not included in the 28 source categories listed in 40 CFR 52.21(b)(1). For the initial Permit No. 3691-157-0065-E-01-0 and Permit Amendment No. 3691-157-0065-E-01-1, the Division had determined that the sum of the heat input from the boilers and hot oil heaters exceeded the 250 MMBtu/hr threshold for fossil fuel-fired boilers (singularly or in combination) in the listed PSD 28 source categories in 40 CFR 52.21(b)(1)(iii)(u), thus creating a “nested” PSD source within the facility, and added appropriate limitations. However, the Division has since determined that the hot oil heaters should be not be included as “fossil-fueled boiler” under 40 CFR 52.21. Therefore, this Title V Permit will remove the hot oil heaters from the existing PSD avoidance limit as discussed below.

The sum of the heat input from the boilers equal 275.501 MMBtu/hr, which is still above the 250 MMBtu/hr threshold. Therefore, the boiler-fired source emissions are limited to a major source threshold of 100 tpy and fugitive emissions must be taken into account in emissions calculations. The only limit of concern for the boilers is CO. This Title V Permit includes a limit of 50 ppm CO for the boilers (and previously in Permit Amendment No. 3691-157-0065-E-01-1, 80 ppm CO in the hot oil heaters) which will limit the CO emissions to less than 100 tpy for a CO PSD Avoidance limit. Additionally, the units are restricted to firing natural gas only, including the hot oil heaters. The facility is required to conduct yearly boiler/heater tune-ups for all emission sources that will operate during the period of May 1 – September 30 for NO<sub>x</sub> emissions under Georgia Rule 391-3-1-.02(2)(III).

#### 40 CFR 60 Subpart Dc – NSPS for Small Industrial-Commercial-Institutional Steam Generating Units

This rule applies to steam generating units with a heat input capacity between 10 and 100 MMBtu/hr, constructed after June 9, 1989. All boilers and hot oil heaters are classified as “steam-generating units” and are subject to this regulation. The hot oil heaters do not meet the definition of “process heaters” under this regulation. The units are restricted to firing natural gas only, so the PM, opacity, and SO<sub>2</sub> emission limitations and associated monitoring do not apply. The facility will be required to submit reports upon construction and startup of the units and maintain records of monthly natural gas usage.



Georgia Rule 391-3-1-.02(2)(d) – Fuel-Burning Equipment

Georgia Rule (d) contains provisions for PM, opacity, and NO<sub>x</sub> emissions from fuel-burning equipment, which includes both the boilers and the hot oil heaters. The boilers and hot oil heaters will be constructed after January 1, 1972 and have a heat input capacity of greater than 10 MMBtu/hr but less than 250 MMBtu/hr. The filterable PM emissions from the boilers and oil heaters are limited to  $0.5(10/R)^{0.5}$  lb/MMBtu heat input.

Georgia Rule (d) also limits the opacity from the boilers and oil heaters to less than 20% opacity (6-minute average), except for one 6-minute period per hour of not more than 27% opacity. These units will not be subject to the NO<sub>x</sub> limit under 391-3-1-.02(2)(d)4 because the capacity for each unit will be less than 250 MMBtu/hr.

Georgia Rule 391-3-1-.02(2)(g) – Sulfur Dioxide

Georgia Rule (g) limits the sulfur content of fuel burned in a unit below 100 MMBtu/hr to 2.5% or less. The facility will only fire natural gas in the boilers and hot oil heaters, which subsumes this limit and ensures compliance.

Georgia Rule 391-3-1-.02(2)(III) – NO<sub>x</sub> Emissions from Fuel-Burning Equipment

Georgia Rule (III) limits NO<sub>x</sub> emissions from fuel-burning equipment with a heat input capacity between 10 and 250 MMBtu/hr installed after May 1, 1999 in specific counties (Jackson County included). The boilers and hot oil heaters are limited to 30 ppm NO<sub>x</sub> at 3% O<sub>2</sub> on a dry basis during the months of May through September every year.

**Fire Pump FP01**40 CFR 60 Subpart IIII – NSPS for Stationary Compression Ignition Internal Combustion Engines and 40 CFR 63 Subpart ZZZZ – NESHAP for Reciprocating Internal Combustion Engines

The facility has a 107 hp diesel fired emergency fire pump that is classified as a reciprocating internal combustion engine (RICE) unit. The 107 hp fire pump, operating on diesel at 200 hours per year, emits 0.1336 tpy CO (per AP-42 Table 3.3-1). Compliance with 40 CFF 60 Subpart IIII is demonstrated by purchasing engines certified to the emissions standards in 40 CFR 60.4205(c) and emission limitations of Table 4. Compliance with 40 CFR 63 Subpart ZZZZ is demonstrated by complying with all applicable requirements of 40 CFR 60 Subpart IIII per 40 CFR 63.6590(c).

**Cathode Powder Rooms, Cathode Powder Vacuum Pump**40 CFR 63 Subpart CCCCCC – Area Source NESHAP for Paints and Allied Products Manufacturing

This rule regulates area source manufacturers of paints and allied products that contain metal-containing HAP – defined as means a material containing benzene, methylene chloride, or compounds of cadmium, chromium, lead, and/or nickel, in amounts greater than or equal to 0.1% by weight for carcinogens, or 1% by weight for non-carcinogens. Paints and allied products manufacturing operations include the production of paints, inks, adhesives, stains, varnishes, shellacs, putties, sealers, caulks, and other coatings from raw materials, the intended use of which is to leave a dried film of solid material on a substrate. Benzene and methylene chloride are volatile HAP. Compounds of cadmium, chromium, lead and/or nickel are metal HAP.

The affected source is only those processes that process, use, or generate the target HAP, not the entire facility. The facility must comply with the requirements of this rule upon startup of the affected sources. Affected sources must operate a particulate control device during the addition of pigments or during grinding/milling of pigments that contained the listed compounds. PM control devices must be maintained such that visible emissions shall not exceed 10% opacity when averaged over a 6-minute period if the device vents to atmosphere.

As previously described, the cathode preparation process includes the weighing and blending of the powdered components (including nickel, a metal HAP) with the NMP to create the slurry. The slurry is then applied to the foil substrate and dried. Affected sources must meet the following requirements:

- The facility must operate a capture system that minimizes fugitive particulate emissions when adding dry solids that contain compounds of cadmium, chromium, lead, or nickel to a process vessel or to a grinding or milling operation, and route them to a particulate control device. This requirement does not apply to solids that are in paste, slurry, or liquid form. (Note that SKBA will not operate milling or grinding processes containing these metal-HAP.)
- The facility must conduct an initial inspection of each particulate control device. For each wet particulate control system, verify the presence of water flow. The facility must visually inspect the ductwork and control equipment for leaks and inspect the interior of the control device for structural integrity. Conduct daily inspections to verify the presence of water flow. Conduct weekly visual inspections of any flexible ductwork for leaks. Conduct annual inspections of the rigid ductwork, and the interior of the control system.
- For each dry particulate control system, inspect the system ductwork and control device for leaks. Perform weekly visual inspections of any flexible ductwork for leaks. Inspect rigid ductwork for leaks and the interior of the dry particulate control device on an annual basis.
- Perform quarterly visual determination of emissions.

The only affected equipment are the Phase 1 Cathode Powder Room Measure and Feed (ID Nos. PR02 and PR04) which is controlled by Baghouses 1 and 2 (ID Nos. BH01 and BH02) and Phase 2 Cathode Powder Room Measure, Feed, Vacuum Pump (ID Nos. 2PR02, 2PR04, 2PR05 and 2PR06) which is controlled by baghouses (ID Nos. 2BH02, 2BH04, 2BH05 and 2BH06).

The facility's initial Phase 1 construction Permit subjected the facility to 40 CFR 63 Subpart VVVVVV – "NESHAP for Chemical Manufacturing Area Sources." Based on a determination by EPA on April 8, 2020, which determined that a similar lithium-ion battery manufacturing facility was subject to MACT 7C, the facility has also concluded that they are also subject to this MACT rather than 40 CFR 63 Subpart 6V.

### **Various Sources in Anode Separation, and Cathode and Anode Notching**

#### Georgia Rule 391-3-1-.02(2)(b) – Visible Emissions

Georgia Rule (b) limits the opacity of emissions from any source to less than 40%, unless a more restrictive limit applies. The rule will apply to all process equipment at the facility. Violation of the rule is not likely due to the nature of the process and the use of control equipment.

Georgia Rule 391-3-1-.02(2)(e) – Particulate Emission from Manufacturing Processes

Georgia Rule (e) limits the emission of particulate matter on a pound per hour basis from a source based on the ton per hour of material input. The rule applies to all process equipment at the facility. Violation of the rule is not likely due to the nature of the process and the use of control equipment. The facility must monitor pressure drops across all baghouses and conduct VE checks weekly.

Georgia Rule 391-3-1-.02(2)(n) – Fugitive Emissions

Georgia Rule (n) limits the opacity of fugitive emissions to 20% and requires the facility to take precautions to prevent dust from becoming airborne. It is not likely this rule would be violated because all operations are in an enclosed building.

**THE FOLLOWING RULES ARE NOT APPLICABLE TO THIS FACILITY**40 CFR 60 Subpart Kb – NSPS for Volatile Organic Liquid Storage Vessels

While the facility will have volatile organic liquid (NMP) storage tanks on site, they have asserted that none of the tanks are larger than 75 m<sup>3</sup> (19,813 gallons). Therefore, none of the 40 CFR 60 Subparts K, Ka, or Kb apply. Each NMP recovery system will have a 13,800-gallon storage tank associated with the process (TK01 through TK04) storing an 80% NMP mixture. Additionally, there will be 6 NMP supply tanks at 13,200 gallons each storing 98% NMP. All tanks are equipped with floating roofs.

40 CFR 63 Subpart DDDDD and 63 Subpart JJJJJ – NESHAP for Industrial, Commercial, and Institutional Boilers (major sources and area sources)

The facility's boilers are not subject to 40 CFR 63 Subpart DDDDD since they are a minor source of HAP. 40 CFR 63 Subpart JJJJJ applies to each boiler at area sources of HAP. However, under §63.11195(e), gas-fired boilers, as defined in §63.11237, are not subject to Subpart JJJJJ. Under §63.11237, a gas-fired boiler is defined as "any boiler that burns gaseous fuels," which includes natural gas. None of these units will be connected to a fuel oil source. Because the boilers meet this definition, they are not subject to 40 CFR 63 Subpart JJJJJ.

Georgia Rule 391-3-1-.02(2)(bb) – Petroleum Liquid Storage

This rule applies to tanks that have a capacity of greater than 40,000 gallons that store a petroleum liquid. All tanks at the facility are less than 40,000 gallons and NMP is not a petroleum liquid.

Georgia Rule 391-3-1-.02(2)(nn) – VOC Emissions from External Floating Roof Tanks

This rule applies to tanks that have a capacity of greater than 40,000 gallons. All tanks at the facility are less than 40,000 gallons.

Georgia Rule 391-3-1-.02(2)(vv) – Volatile Organic Liquid Handling and Storage

This rule applies to tanks that have a capacity of greater than 40,000 gallons and in specified counties. All tanks at the facility are less than 40,000 gallons and Jackson County is not in the applicable county list.

Georgia Rule 391-3-1-.02(2)(mmm) – NOx Emissions from Stationary Gas Turbines and Stationary Engines used to Generate Electricity

This rule applies to stationary gas turbines or stationary engines used to generate electricity with a nameplate capacity greater than 100 kilowatts. At 106 hp, the fire pump is only 79 KWe. Additionally, emergency standby stationary gas turbines and stationary engines are exempt from limitations per 391-3-1-.02(mmm)4.(i).

### C. Permit Conditions

Permit Condition 3.2.1 limits the CO emissions from the boilers to 50 ppm in order to stay under 100 tons per year total as a PSD avoidance limit. This limit was established in Condition 2.10 of Permit Amendment No. 3691-157-0065-E-01-1. In the initial Permit (3691-157-0065-E-01-0), the facility had been subject to a natural gas usage limit and recordkeeping to demonstrate compliance with the 100 tpy limit. This condition previously included an 80 ppm CO limit for the hot oil heaters, but per the discussion above, they were removed during the review for this Title V Permit.

Permit Condition 3.2.2 requires the facility to operate all scrubbers and activated carbon towers during all time of associated process equipment operation. This requirement was established in Condition 2.12 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 scrubbers and carbon towers. These scrubbers and activated carbon towers control much of the VOC and HAP emissions and therefore are necessary for the facility-wide PSD avoidance limits for HAP and VOC. To make it easier to determine what process equipment is associated with each pollution control device, a table was added to this condition in this Title V Permit.

Permit Condition 3.2.3 requires the facility fire only natural gas in all boilers and hot oil heaters in order to remove the facility from applicability to 40 CFR 63 Subpart JJJJJ. This limit was established in Condition 2.11 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 boilers and heaters. There were no changes to this condition in this Title V Permit.

Permit Condition 3.3.1 subjects the boilers and hot oil heaters to the requirements of 40 CF 60 Subparts A and Dc. This is a general requirement that was established in Condition 2.3 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 boilers. There were no changes to this condition in this Title V Permit.

Permit Condition 3.3.2 subjects the Phase 1 and Phase 2 Cathode Powder Rooms Measure, Feed, and vacuum pumps to the requirements of 40 CFR 63 Subparts A and CCCCCC. This is a general requirement that was established in Condition 2.4 of Permit Amendment No. 3691-157-0065-E-01-1 (Condition 2.4 of Permit No. 3691-157-0065-E-01-0 subjected the facility to 40 CFR 63 Subpart VVVVVV) to include the Phase 2 equipment. The last sentence was removed in this Title V Permit; all applicable requirements will be included in this Permit.

Permit Condition 3.3.3 outlines the capture requirements and opacity limitation for the 40 CFR 63 Subpart CCCCCC applicable equipment. This is a new requirement in this Title V permit that provides more detail for the facility's applicability.

Permit Condition 3.3.4 outlines the 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ requirements for the Fire Pump. This condition was established in Condition 2.9 of Permit No. 3691-157-0065-E-01-0. It was modified in this Title V Permit to add citations and to include more thorough requirements.

Permit Condition 3.4.1 subjects all process equipment to an opacity limit of less than 40% (Georgia Rule (b)). This condition was established in Condition 2.5 of Permit No. 3691-157-0065-E-01-0. There were no changes to this condition in this Title V Permit.

Permit Condition 3.4.2 subjects the boilers and hot oil heaters to the PM and opacity requirements of Georgia Rule (d). This condition was established in Condition 2.6 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 boilers and heaters. There were no changes to this condition in this Title V Permit.

Permit Condition 3.4.3 subjects to all applicable equipment to the requirements of Georgia Rule (e). This condition was established in Condition 2.7 of Permit No. 3691-157-0065-E-01-0. There were no changes to this condition in this Title V Permit.

Permit Condition 3.4.4 subjects the boilers and heaters to the NO<sub>x</sub> limit of 30 ppm during the summer months under Georgia Rule (III). This condition was established in Condition 2.8 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 boilers and heaters. There were no changes to this condition in this Title V Permit.

Permit Condition 3.5.1 requires the facility to maintain an adequate supply of filter bags for the baghouses. This condition was established in Condition 4.2 of Permit No. 3691-157-0065-E-01-0. There were no changes to this condition in this Title V Permit.

#### **IV. Testing Requirements (with Associated Record Keeping and Reporting)**

##### **A. General Testing Requirements**

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days (or sixty (60) days for tests required by 40 CFR Part 63) prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing.

## B. Specific Testing Requirements

Permit Condition 4.2.1 requires the facility to conduct performance test for VOC and HAP emissions from scrubbers 1-7 and establish emission rates (in lb/hr) from these scrubbers. The facility is uncertain about the timeline to install each production line (scrubbers 1-4), so they will be allowed to test each line individually (or in groups) but the supporting equipment (scrubbers 5-7) will need to be tested each time as production rates will change. This condition was established in Condition 6.4 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment. Part d. to this condition requiring testing to comply with 40 CFR 63 Subpart CCCCCC was moved to Permit Condition 5.2.5.

Permit Condition 4.2.2 requires continued performance testing of scrubbers once every 12 months. This condition was established in Condition 6.5 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment. There were no changes to this condition in this Title V Permit.

Permit Condition 4.2.3 requires the facility to conduct CO performance tests for the boilers in order to verify the individual unit limits in order to stay below 100 tpy of CO, as well as NOX testing to demonstrate compliance with Georgia Rule (III). This condition was established in Condition 6.6 of Permit Amendment No. 3691-157-0065-E-01-1 after the change in methodology from natural gas usage to ppm limits on the units. This condition previously included testing for CO emissions from the 5 facility hot oil heaters, but per the discussion above, they were removed during the review for this Title V Permit.

## V. Monitoring Requirements

### A. General Monitoring Requirements

Condition 5.1.1 requires that all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

### B. Specific Monitoring Requirements

Permit Condition 5.2.1 lists the required monitoring parameters and frequency of data collection for the baghouses, scrubbers, and activated carbon towers. This helps to ensure the proper operation of the air pollution control equipment. This condition was established in Condition 5.2 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment and part d. was also modified to require monitoring the scrubbant liquid pressure instead of the liquid flow rate. This change was requested by the facility and approved by the Division due to the smaller scrubbers being equipped with include a gauge for the liquid pressure rather than liquid flow rate. There were no changes to this condition in this Title V Permit.

Permit Condition 5.2.2 requires the facility to conduct tune ups of the boilers and hot oil heaters for the purposes of complying with Georgia Rule (III). This condition includes recordkeeping requirements for the tune-ups. This condition was established in Condition 5.1 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment. There were no changes to this condition in this Title V Permit.

Permit Condition 5.2.3 requires the facility to monitor the VOC concentration from the activated carbon towers weekly and to replace the carbon in the unit with the concentration exceeds 10 ppm THC as propane with 7 days of such readings. This condition was established in Condition 5.3 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment. There were no changes to this condition in this Title V Permit.

Permit Condition 5.2.4 requires a weekly VE check from all baghouse stacks. This condition was established in Condition 5.4 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment. There were no changes to this condition in this Title V Permit.

Permit Condition 5.2.5 requires the facility to develop a preventative maintenance program for all baghouses. This condition was established in Condition 5.5 of Permit No. 3691-157-0065-E-01-0. There were no changes to this condition in this Title V Permit.

Permit Conditions 5.2.6 and 5.2.7 require the facility to conduct an initial inspection of each particulate control device subject to MACT 7C and perform a visible emissions test, as well as perform on-going periodic inspections. This condition was established in Condition 5.6 of Permit Amendment No. 3691-157-0065-E-01-1 for all applicable equipment. The requirements were incorporated entirely in this Title V Permit with the additional of Condition 5.2.7.

Permit Condition 5.2.8 requires the facility to monitor the CO emissions from the boilers. This condition was established in Condition 5.7 of Permit Amendment No. 3691-157-0065-E-01-1. This condition previously included monitoring for CO emissions from the 5 facility hot oil heaters, but per the discussion above, they were removed during the review for this Title V Permit.

C. Compliance Assurance Monitoring (CAM) – Not applicable

## **VI. Record Keeping and Reporting Requirements**

### **A. General Record Keeping and Reporting Requirements**

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the applicable monitoring triggers, the cause of such occurrence, and the corrective action taken, are required to be kept by the Permittee and reporting is required on a semiannual basis.

## B. Specific Record Keeping and Reporting Requirements

There are no excess emissions defined by any rule or regulation to be reported.

Permit Condition 6.1.7.b outlines the various exceedances the facility must report semiannually. These were all defined in this Title V Permit.

Permit Condition 6.1.7.c outlines the various excursions the facility must report semiannually. This condition was partially established in Condition 7.14 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment and to remove references to natural gas usage calculations for the CO emission limitation. There were no changes to this condition in this Title V Permit.

Permit Condition 6.2.1 requires the facility to notify the Division upon construction and initial startup of the facility. The facility must also submit a detailed list of all equipment (as a supplement to the Application) and a detailed sample of facility-wide VOC and HAP emissions calculations within 60 days after startup. This condition was established in Condition 7.3 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment. There were no changes to this condition in this Title V Permit.

Permit Condition 6.2.2 requires the facility to notify the Division of construction and startup of the boilers and hot oil heaters under 40 CFR 60 Subpart Dc. This condition was established in Condition 7.4 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment. There were no changes to this condition in this Title V Permit.

Permit Condition 6.2.3 was modified to include natural gas usage records as required by 40 CFR 60 Subpart Dc. This condition was established in Condition 7.6 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment and to remove references to natural gas usage calculations for the CO emission limitation. There were no changes to this condition in this Title V Permit.

Permit Condition 6.2.4 requires the facility to maintain records of the tune-ups and performance tests for the boilers and hot water heaters since the facility will be monitoring the ppm of CO for these emission units. This condition was established in Condition 7.7 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment and to remove references to natural gas usage calculations for the CO emission limitation. There were no changes to this condition in this Title V Permit.

Permit Condition 6.2.5 outlines the emission calculation protocol to be used to calculate monthly and 12 month rolling totals of VOC and HAP emissions. This condition was established in Condition 7.8 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment. There were no changes to this condition in this Title V Permit.



Permit Conditions 6.2.6 and 6.2.7 require the facility to calculate monthly and 12 month rolling total individual and total HAP emissions. This condition was established in Conditions 7.9 and 7.10 of Permit No. 3691-157-0065-E-01-0 for all applicable equipment. The requirements were incorporated entirely in this Title V Permit.

Permit Conditions 6.2.8 and 6.2.9 require the facility to calculate monthly and 12 month rolling total VOC emissions. This condition was established in Conditions 7.11 and 7.12 of Permit No. 3691-157-0065-E-01-0 for all applicable equipment. The requirements were incorporated entirely in this Title V Permit.

Permit Condition 6.2.10 requires the facility to maintain a log for carbon replacement in the activated carbon towers. This condition was established in Condition 7.13 of Permit No. 3691-157-0065-E-01-0 and modified in Permit Amendment No. 3691-157-0065-E-01-1 to include the Phase 2 equipment. There were no changes to this condition in this Title V Permit.

New Permit Conditions 6.2.11 through 6.2.16 outline all 40 CFR 63 Subpart CCCCCC recordkeeping and reporting requirements, including inspection/testing activities, initial notification of applicability (included in Conditions 7.5 and 7.15 of Permit Amendment No. 3691-157-0065-E-01-1), NOCS, annual compliance certifications, and notification if they cease to use the listed HAP under this subpart. These conditions are new for this Title V Permit.

## **VII. Specific Requirements**

A. Operational Flexibility – Not Applicable

B. Alternative Requirements – Not Applicable

C. Insignificant Activities

See Permit Application on GEOS website.  
See Attachment B of the permit

D. Temporary Sources – Not Applicable

E. Short-Term Activities – Not Applicable

F. Compliance Schedule/Progress Reports – Not Applicable

G. Emissions Trading – Not Applicable

H. Acid Rain Requirements – Not Applicable

I. Stratospheric Ozone Protection Requirements – Not Applicable

J. Pollution Prevention – Not Applicable

K. Specific Conditions – Not Applicable

**VIII. General Provisions**

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Template Condition 8.14.1 was updated in September 2011 to change the default submittal deadline for Annual Compliance Certifications to February 28.

Template Condition Section 8.27 was updated in August 2014 to include more detailed, clear requirements for emergency generator engines currently exempt from SIP permitting and considered insignificant sources in the Title V permit.

Template Condition Section 8.28 was updated in August 2014 to more clearly define the applicability of the Boiler MACT or GACT for major or minor sources of HAP.

**Addendum to Narrative**

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//